



Anwendungsbericht/User Application Report

Produkt/Product:

Penergetic b
Penergetic p

Fachberater/Consultant:

Renovagro – Agric. Renovável LTDA
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Eduardo Mello (Consultants)

Anwender/User:

Osmar C. Vassoler
Aquidaban/PR - Brazil

Datum/Date:

2015

Effect of penergetic p and b on the Evolution of the Soil Fertility

Description of the area:

The fields have a total area of 27,96 ha and grains have been cultivated on them for more than twenty years.

Compaction: measured in 2010

- 00-20 cm: 2.086 kPa
- 20-40 cm: 1.503 kPa

History of pathogens in the soil: absent.

Composition: Clay: 64,7%, Sand: 7%, Silt: 28,3%

CROP ROTATIONS										
Year	2010		2011		2013		2014		2015	
Harvest	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Crop	Soy	Corn	Soy	Corn	Soy	Corn	Soy	Corn	Soy	Corn

Doses of Penergetic for Soy:

Product	Doses (g/ha)	Stage
Penergetic b	300	At the dissection or pre-emerging
Penergetic p	300	Between V4 and R1 (two applications with minimum of 15 days in between)

Productivity averages:

Soy						
Harvest	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015
Productivity bags/ha	45	58	58	58	62	62

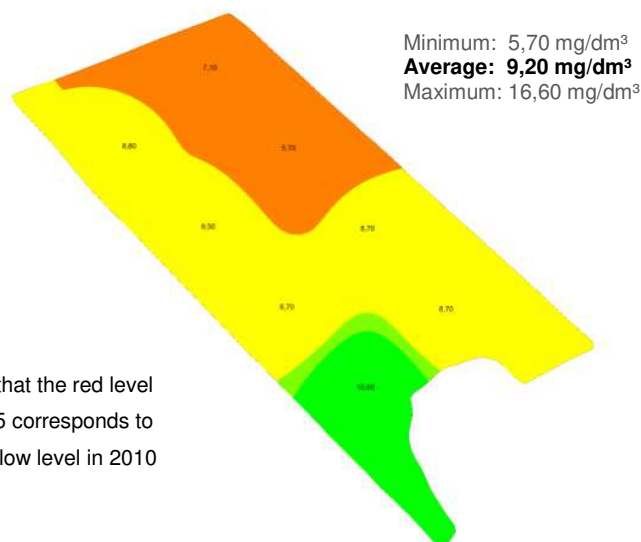
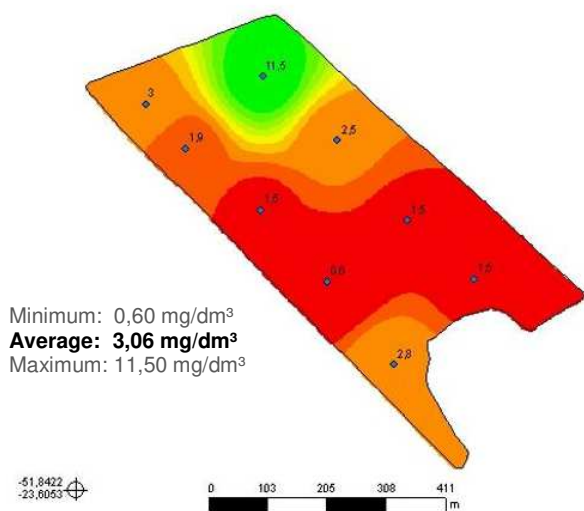
Corn							
Harvest	2009	2010	2011	2012	2013	2014	2015
Productivity bags/ha	87	83	91	90	91	103	103

Average use of fertilizers and soil correctives in the period from 2009 to 2015:

Soy		Corn	
Fertilizer	Dose/ha/crop	Fertilizer	Dose/ha/crop
02.20.10	210 kg	10.15.15	250 kg
Limestone	0 kg	Limestone	0 kg
Gypsum	0 kg	Gypsum	0 kg

* Note: The Penergetic Technology was only used in the last 5 soybean crops

Phosphor levels in the soil before using Penergetic and after the 5 soybean crops:



*Note that the red level in 2015 corresponds to the yellow level in 2010

Ciente: Osmar Casavechia Vassoler
Area de Contorno: 27,75 (ha)
Min: 0,60 (mg/dm³)
Méd: 3,06 (mg/dm³)
Máx: 11,50 (mg/dm³)
Desvio Padrão: 2,89 (mg/dm³)
Prof. da Amostra: 0 (cm) - 20 (cm)
Data Inicial: 15/4/2010 13:54:40
Data Final: 15/4/2010 13:54:40

mg/dm ³	ha
0,60 - 1,64	12,07
1,64 - 2,34	4,11
2,34 - 3,32	7,10
3,32 - 4,69	0,82
4,69 - 6,21	0,52
6,21 - 7,79	0,46
7,79 - 9,32	0,47
9,32 - 10,63	0,58
10,63 - 11,50	2,00

Legend: P (Melechil) and Contorno do Talhão

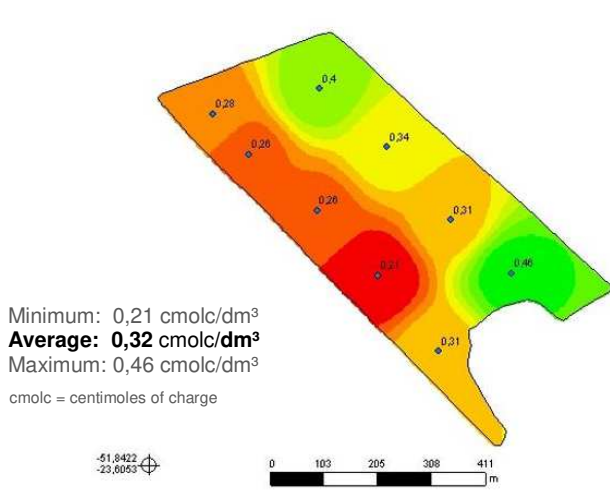
Ciente: Osmar Casavechia Vassoler
Fazenda: Lote 108A e 108B
Talhão: TH_01
Nome: Mapa de Fertilidade
Tipo: Análise de Solo 00 - 20 cm
Área: 27,96 ha
Data: 25/08/2015
Min: 5,70 mg/dm³
Máximo: 16,60 mg/dm³
Média: 9,20 mg/dm³

mg/dm ³	ha
13,80 - 16,60	3,54
11,16 - 13,88	0,65
8,43 - 11,15	16,21
5,70 - 8,42	7,56
Abaixo 5,70	0,00

2010

2015

Potassium levels in the soil before using Penergetic and after the 5 soybean crops:



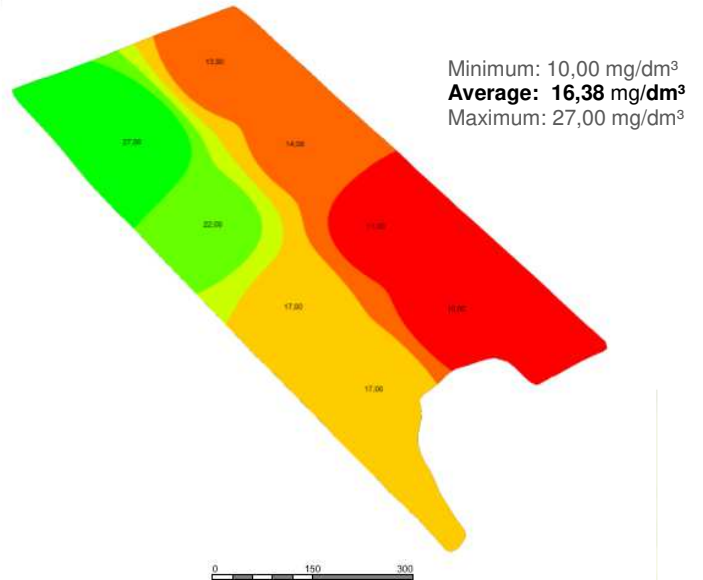
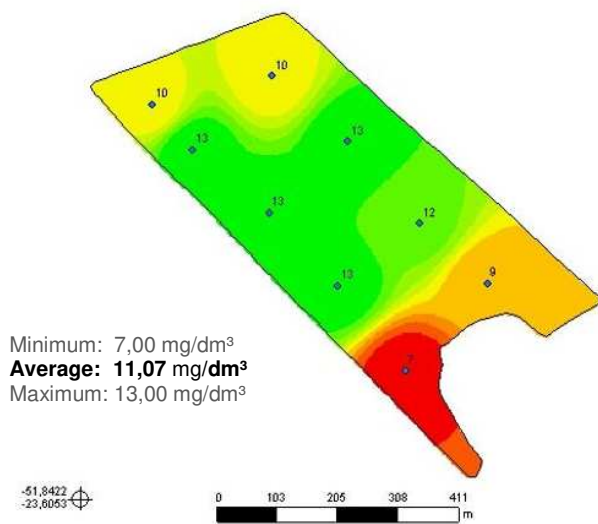
cmolc/dm ³	ha	K (Não especificado)
0,21 - 0,24	2,35	
0,24 - 0,27	4,69	
0,27 - 0,30	3,45	
0,30 - 0,32	6,03	
0,32 - 0,35	3,91	
0,35 - 0,38	1,33	
0,38 - 0,41	2,90	
0,41 - 0,44	1,27	
0,44 - 0,46	2,23	

cmolc/dm ³	ha
0,64 - 0,70	4,27
0,57 - 0,63	2,96
0,50 - 0,56	3,31
0,43 - 0,49	17,43
Abaixo 0,43	0,00

2010

2015

Sulfur levels in the soil before using Penergetic and after the 5 soybean crops:



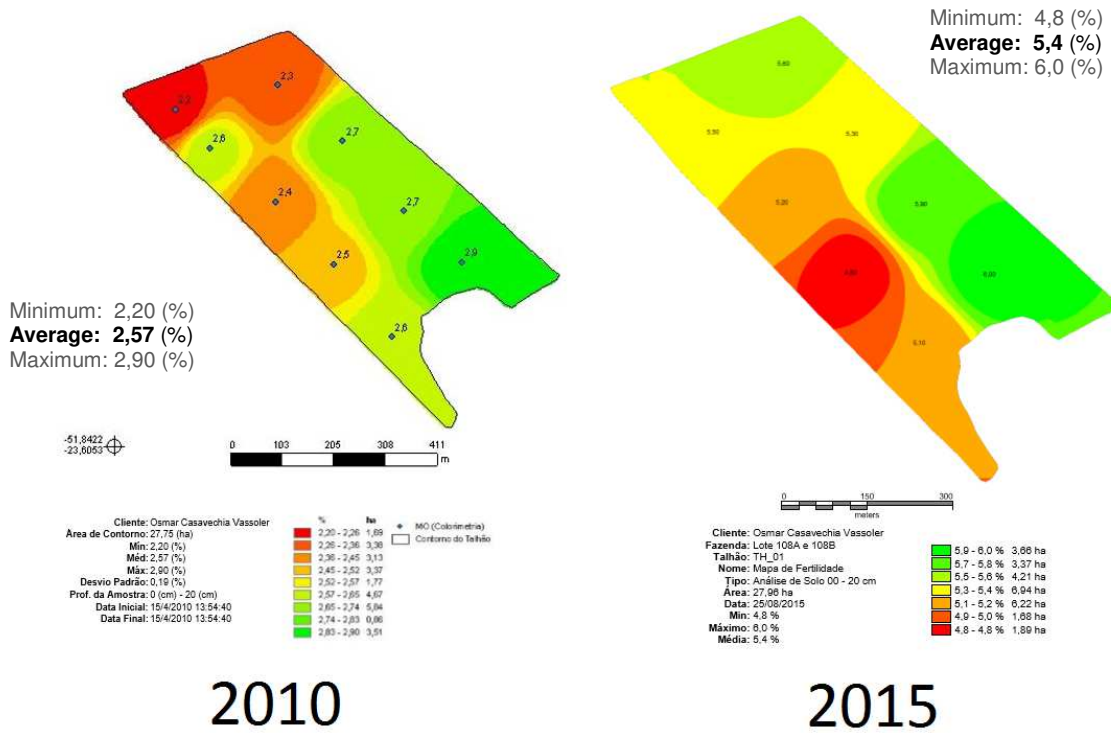
mg/dm ³	ha	S (Não especificado)
7,00 - 7,39	1,04	
7,39 - 8,05	0,68	
8,05 - 8,77	0,30	
8,77 - 9,58	3,65	
9,58 - 10,33	4,55	
10,33 - 10,99	1,00	
10,99 - 11,71	1,44	
11,71 - 12,46	4,00	
12,46 - 13,00	9,97	

mg/dm ³	ha
23,57 - 27,00	3,67
20,89 - 23,56	2,89
17,81 - 20,88	1,28
14,94 - 17,80	7,34
12,08 - 14,93	6,07
10,00 - 12,05	6,93

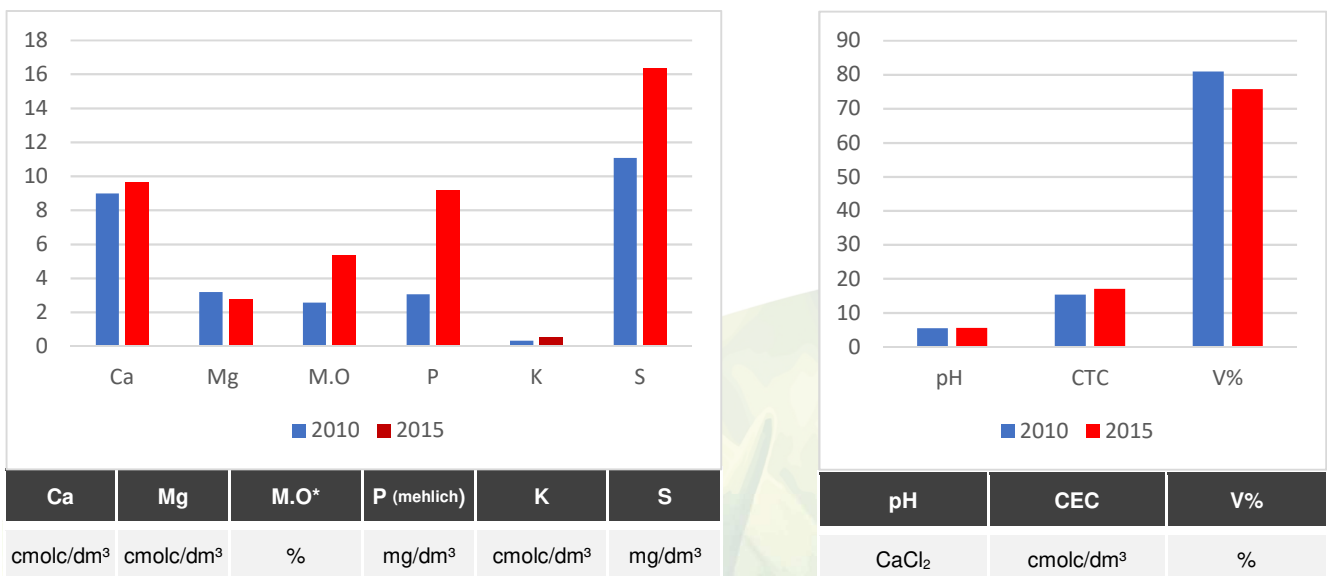
2010

2015

Organic Matter levels in the soil before using Penergetic and after the 5 soybean crops:



Evolution in the Fertility of the Soil:



*MO = Organic matter

CEC (CTC) = Cation Exchange Capacity
V% = Percent Base Saturation